

Client's ref.: VIT02-0182
Our ref.: 0608-8614US/final/M.F.Lin/Steve

What is claimed is:

- 1 1. A clock skew indicating apparatus comprising:
2 a detection circuit for receiving as input first and
3 second clocks and generating as output a compare
4 signal; and
5 a sampling circuit, according to said compare signal,
6 for asserting an output signal indicative of skew
7 existing between said first and said second
8 clocks.
- 1 2. The apparatus as recited in claim 1 wherein said
2 first clock is transmitted with a differential signaling
3 scheme.
- 1 3. The apparatus as recited in claim 2 further
2 comprising a first differential-to-single-ended converter
3 receiving said first clock, for providing said detection
4 circuit with a version of said first clock converted into a
5 single-ended signaling scheme.
- 1 4. The apparatus as recited in claim 3 wherein said
2 second clock is transmitted with the differential signaling
3 scheme.
- 1 5. The apparatus as recited in claim 4 further
2 comprising a second differential-to-single-ended converter
3 receiving said second clock, for providing said detection
4 circuit with a version of said second clock converted into
5 the single-ended signaling scheme.

1 6. The apparatus as recited in claim 1 wherein the
2 width of said compare signal generated by said detection
3 circuit is substantially proportional to an amount of said
4 skew between said first and said second clocks.

1 7. The apparatus as recited in claim 6 wherein said
2 sampling circuit samples said compare signal at a
3 predetermined frequency such that said output signal is set
4 to indicate the amount of said skew between said first and
5 said second clocks.

1 8. The apparatus as recited in claim 7 further
2 comprising a phase-locked loop for providing said sampling
3 circuit with a reference clock running at said predetermined
4 frequency.

1 9. An apparatus for indicating clock skew within
2 integrated circuits (ICs) of a system, comprising:
3 a first IC chip operating on a first clock and
4 providing as output said first clock; and
5 a second IC chip operating on a second clock,
6 comprising:
7 a detection circuit for receiving as input said
8 first and said second clocks and generating
9 as output a compare signal; and
10 a sampling circuit, according to said compare
11 signal, for asserting an output signal
12 indicative of skew existing between said
13 first and said second clocks;

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14 wherein the width of said compare signal is
15 substantially proportional to an amount of
16 said skew between said first and said second
17 clocks.

1 10. The apparatus as recited in claim 9 wherein said
2 first IC chip comprises:

3 a control pin receiving an enable signal external to
4 said first IC chip; and
5 an output buffer coupled to receive said first clock,
6 for outputting said first clock under control of
7 said enable signal.

1 11. The apparatus as recited in claim 9 wherein said
2 first clock is transmitted with a differential signaling
3 scheme.

1 12. The apparatus as recited in claim 11 wherein said
2 second IC chip comprises a first differential-to-single-
3 ended converter receiving said first clock, for providing
4 said detection circuit with a version of said first clock
5 converted into a single-ended signaling scheme.

1 13. The apparatus as recited in claim 12 wherein said
2 second clock is transmitted with the differential signaling
3 scheme.

1 14. The apparatus as recited in claim 13 wherein said
2 second IC chip further comprises a second differential-to-
3 single-ended converter receiving said second clock, for
4 providing said detection circuit with a version of said

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5 second clock converted into the single-ended signaling
6 scheme.

1 15. The apparatus as recited in claim 9 wherein said
2 sampling circuit samples said compare signal at a
3 predetermined frequency such that said output signal is set
4 to indicate the amount of said skew between said first and
5 said second clocks.

1 16. The apparatus as recited in claim 15 wherein said
2 second IC chip comprises a phase-locked loop for providing
3 said sampling circuit with a reference clock running at said
4 predetermined frequency.